

Serial No. 10/727,578
Docket No. YOR920030072US1 (YOR.440)

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REMARKS

Claims 1-22, 25, and 26 are all the claims presently pending in the application. Claims 23 and 24 have been canceled to expedite prosecution. Claims 1-7, 10-13, 16-22, and 25 have been amended to more particularly define the invention.

It is noted that the claim amendments are made only for more particularly pointing out the invention, and not for distinguishing the invention over the prior art, narrowing the claims or for any statutory requirements of patentability. Further, Applicant specifically states that no amendment to any claim herein should be construed as a disclaimer of any interest in or right to an equivalent of any element or feature of the amended claim.

Claims 1-26 stand rejected under 35 U.S.C. § 101 as allegedly directed to nonstatutory subject matter. Claims 1-26 stand rejected under 35 U.S.C. § 102(e) as allegedly anticipated by US Patent Application Publication U.S. 2003/0176931 to Pednault et al. These rejections are respectfully traversed in the following discussion.

I. THE CLAIMED INVENTION

As exemplarily defined by independent claim 1, the claimed invention is directed to a predictive model method. An input data is received into an initial model to develop an initial model output. The input data and the initial model output is then received as inputs into a first boosting stage to develop an improvement to said initial model output.

As explained in the second full paragraph on page 18, the conventional methods of segmented regression using tree-based predictive modeling has a problem in that data is quickly exhausted in the method of dividing data into numerous subsets.

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In contrast, the present invention provides a method that provides an accurate model that converges quickly even with limited amounts of data. A key feature of the present invention that permits it to overcome the deficiency of lack of data is the technique of providing, as an input into the second stage, both input data and the result of the first stage, thereby achieving a boost effect not present in the conventional method.

II. THE 35 USC §101 REJECTION

Claims 1-26 stand rejected under 35 U.S.C. §101 as allegedly directed toward nonstatutory subject matter. The Examiner alleges that the “*... claims do not set forth any structure whereby the functionality of the software may be realized.*”

In response, Applicant first submits that the basis of this rejection is not clearly understood, since the above-recited statement is not the standard for statutory subject matter. Rather, as described in the “Interim Guidelines”, statutory subject matter relates to a threshold evaluation of the invention as a whole, including the description of utility in the disclosure.

Moreover, as described in the specification, Applicant submits that claims 1-17 and 25-26 are directed to a process being executed on a computer, claims 18 and 19 are directed to an apparatus (e.g., a computer) executing the method of the invention, claims 20 and 21 are directed to Beauregard claims (e.g., a machine-readable medium having instructions tangibly embedded therein), and claim 22 is directed to a method of providing a service.

Relative to the apparatus and Beauregard claims (e.g., claims 18-21), these claims clearly have structural/functionality language and are, therefore, clearly directed to statutory subject matter.

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Relative to the process claims, the relatively recent *State Street* and *AT&T* cases (as well as the "Interim Guidelines") confirm that such claims are directed toward statutory subject matter if the result achieved is "useful, concrete and tangible", and Applicant submits that data mining clearly provides such result, as described in the disclosure at, for example, the first paragraph of page 2 through the third paragraph on page 3, wherein is mentioned non-limiting applications for direct-mail targeted-marketing, default on loans, insurance, and Internet advertising.

In view of the foregoing, the Examiner is respectfully requested to reconsider and withdraw this rejection.

III. THE PRIOR ART REJECTION

The Examiner alleges that Pednault et al., teaches the claimed invention. Applicant submits, however, that there are elements of the claimed invention which are neither taught nor suggested by this prior art reference.

Applicant further submits that the rejection currently of record indicates a bit of confusion on the part of the Examiner, due to misinterpretations made by the Examiner, and that the Examiner thereby improperly ignores the plain meaning of the claim language, as such language would be interpreted by one having ordinary skill in the art.

First, relative to the rejection of claim 1, the Examiner rejects this claim by taking the position that "stages" in the specification are equivalent to "segments" in the cited prior art reference. However, Applicant submits that "boosting stage" and "data segment" are terms of art that have very different meanings that cannot be equated. In an attempt to expedite prosecution,

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some of the claim amendments are intended to use the term "boosting stage" to make this distinction clear.

Although the Examiner has the duty during prosecution to provide the broadest reasonable interpretation of claim language, this broad interpretation must be consistent with the meaning of terminology as understood in the art. That is, an Examiner is not entitled to simply and arbitrarily equate terms of art in violation of the meanings accepted in the art.

This first misinterpretation is used as a basis for all subsequent claim rejections, so it is considered by Applicant as being the Examiner's primary argument (e.g., the argument for rejecting claim 3 presupposes that "stages" in the specification are equivalent to "segments" in the prior art reference). In the rejection of claim 4, the Examiner takes the position that the idea of using the outputs of previous boosting stages as input to subsequent boosting stages is anticipated by the cited reference, and cites Figures 33 and 34 as examples.

However, Applicant submits that there is no equivalent concept of nor any mention of boosting stages in the cited reference. This previous patent application by Applicant dealt with segmentation-based predictive models in which each model associated with each data segment is constructed independently from all other models associated with all other data segments.

There is no notion in this previous work by Applicant of using an output of one segment model as an input to another segment model.

In contrast, the present invention specifically teaches using an output of one boosting stage model as input to another boosting stage model.

Moreover, the boosting stage models in the present invention are not associated with specific data segments in the previous patent application. Instead, the role of a boosting stage model is to improve the output of the initial model and/or the outputs of previous boosting stage

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models. The present invention is thus quite distinct from Applicant's previous patent application.

Hence, turning to the clear language of the claims, in Applicant's previous patent application, there is no teaching or suggestion of: "... receiving second input data and said initial model output as inputs into a first boosting stage ...", as required by independent claim 1. The remaining independent claims have similar language or otherwise have language that clearly distinguishes from the cited reference, so that all remaining claims are clearly patentable over this prior art reference.

Moreover, the argument used to reject claim 4 is also repeated in other claim rejections (e.g., claims 10 and 12). In the rejection of claim 10, the Examiner also takes the position that the merging process described in Applicant's previous patent application merges the outputs of models. This position is also incorrect.

The merging process merges data segments and requires that a new model for the newly merged data segment be constructed. In some cases, this new model can be calculated by first merging the sufficient statistics of the models initially associated with the data segments prior to merging. The parameters for the new model are then calculated using the merged sufficient statistics.

Thus, there is no merging of model outputs in this cited reference.

Applicant points out, prior to proceeding to Appeal, that perhaps the most troubling aspect of the rejection currently of record is that it is based on superficial lexical mappings of terminology without consideration of what that terminology actually means to one having ordinary skill in the art (which gives rise to erroneous lexical mappings) and without consideration of each claim relative to the prior art.

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In general, it is noted that many of the rejections are simply lexical mappings without any further argument. Some of these mappings are quite ridiculous and nonsensical to one having ordinary skill in the art. For example, claim 11, wherein the Examiner equates feeding an output of one stage model as input to a subsequent stage model as being equivalent to forward stepwise variable selection. The first case is using an output of one thing as input to another thing. The second case is performing a decision-making process to optimize a result. The two are completely incongruent and to even attempt to equate them is quite nonsensical to one having ordinary skill in the art. The only link between the two is the appearance of the word "forward" in both.

Applicant further submits that there are additional misunderstandings in the rejection currently of record but that these deficiencies identified above are sufficient to establish that the present invention is clearly not taught or suggested by the cited prior art.

Therefore, Applicant submits that there are elements of the claimed invention that are not taught or suggest by the cited prior art, and the Examiner is respectfully requested to withdraw this rejection.

IV. FORMAL MATTERS AND CONCLUSION

In view of the foregoing, Applicant submits that claims 1-22, 25, and 26, all the claims presently pending in the application, are patentably distinct over the prior art of record and are in condition for allowance. The Examiner is respectfully requested to pass the above application to issue at the earliest possible time.

Should the Examiner find the application to be other than in condition for allowance, the

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Examiner is requested to contact the undersigned at the local telephone number listed below to discuss any other changes deemed necessary in a telephonic or personal interview.

The Commissioner is hereby authorized to charge any deficiency in fees or to credit any overpayment in fees to Assignee's Deposit Account No. 50-0510.

Respectfully Submitted,

Date: 11/30/06

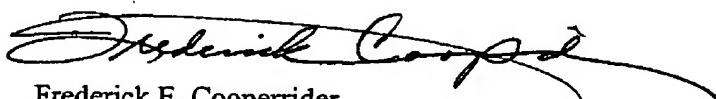


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CERTIFICATION OF TRANSMISSION

I certify that I transmitted via facsimile to (571) 273-8300 this Amendment under 37 CFR §1.111 to Examiner A. Kennedy on November 30, 2006.



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